



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,986	09/23/2003	Lee Kong Weng	70030735-1	4231

7590 06/22/2005
AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
Legal Department, DL429
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

PAYNE, SHARON E

ART UNIT PAPER NUMBER

2875

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

5/24

Office Action Summary	Application No. 10/669,986	Applicant(s) WENG ET AL.	
	Examiner Sharon E. Payne	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-19 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0405</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 14-19 are objected to because of the following informalities: the phrase "a said" in line 3 of claim 14 should be "said." Claims 15-19 are necessarily included due to their dependency. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kunihiro et al. (JP 9045965 A).

Regarding claim 1, Kunihiro et al. discloses a ceramic cavity (English abstract) comprising a ceramic substrate for mounting a light emitting diode (English abstract) in a single cavity (Figs. 1 and 2) and *substantially* vertical ceramic sidewalls for minimizing light leakage (Fig. 2), and a metallic coating (reference numbers 2 and 8) on a portion of the ceramic substrate (Fig. 2) and a portion of the ceramic sidewalls for reflecting light in a predetermined direction (Fig. 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2875

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Kosman et al. (U.S. Patent 3,821,590).

Regarding claim 2, Kunihiro et al. does not disclose a cavity filled with an optically transparent material. Kosman et al. discloses a cavity filled with an optically transparent material (reference number 4, Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optically transparent material of Kosman et al. in the cavity of Kunihiro et al. to protect the LEDs while allowing light to transmit through the material.

Regarding claim 8, Kunihiro et al. discloses the steps of forming a single ceramic cavity (English abstract, Fig. 2) comprising a substrate for mounting a light emitting diode (reference number 3, English abstract) in a single cavity (Fig. 2) and substantially vertical ceramic sidewalls for reducing light leakage (English abstract, Fig. 2), coating a portion of the ceramic cavity with a light reflective material (Fig. 2), and positioning a light emitting diode on the

substrate (Fig. 2). Kunihiro et al. does not disclose the step of depositing an optically transparent material in the cavity to protect the light emitting diode.

Kosman et al. discloses the step of depositing an optically transparent material (reference number 4) in the cavity to protect the light emitting diode (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optically transparent material of Kosman et al. in the process of Kunihiro et al. to protect the light emitting diode while letting light pass through. See Fig. 1 of Kosman et al.

Concerning claim 14, Kunihiro et al. discloses a single ceramic cavity (English abstract, Fig. 2) comprising a ceramic substrate (English abstract) for mounting a light emitting diode (reference number 3) in the single cavity (Fig. 2) and *substantially* vertical ceramic sidewalls for reducing light leakage (Fig. 2), a metallic coating on a portion of the ceramic substrate (Fig. 2, English abstract) for reflecting light in a predetermined direction (Fig. 2), a light emitting diode coupled to the substrate (reference number 3, Fig. 2). Kunihiro et al. does not disclose an optically transparent coating.

Kosman et al. discloses an optically transparent coating (reference number 4) for protecting the light emitting diode (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optically transparent material of Kosman et al. in the cavity of Kunihiro et al. to protect the LEDs while allowing light to transmit through the material.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Barlian et al. (U.S. Patent 4,600,977).

Regarding claim 3, Kunihiro et al. does not disclose a white cavity being used as a reflective cavity. Barlian et al. discloses that one can use a cavity that is substantially white in

color (column 6, lines 23-25) or one with a metallic coating for reflecting the light (column 6, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose the white reflective coating of Barlian over the metallic coating of Barlian or Kunihiro et al. for the apparatus of Kunihiro et al. depending on the desired illumination effects.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Zou et al. (U.S. Patent 6,186,649).

Concerning claim 4, Huang does not disclose using silver as a reflective coating. Zou et al. discloses the metallic coating comprising silver (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the silver coating of Zou et al. in place of the reflective coating of Kunihiro et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

Regarding claim 5, Huang does not disclose using gold as a reflective coating. Zou et al. discloses the metallic coating comprising gold (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the gold coating of Zou et al. in place of the reflective coating of Kunihiro et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Gleason (U.S. Patent 1,340,443).

Regarding claim 6, Kunihiro et al. does not disclose the metallic coating being formed by plating. Gleason discloses the metallic coating being formed by plating (page 1, lines 110-112).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plating process of Gleason in the apparatus of Kunihiro et al. to enhance the quality of the reflective surface. See page 1, line 110, to page 2, line 1, of Gleason.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Huang (U.S. Patent 6,715,901).

Concerning claim 7, Kunihiro et al. does not disclose the cavity being formed to contain a plurality of light emitting diodes. Huang discloses the ceramic cavity being formed to contain a plurality of light emitting diodes (column 4, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Huang in the apparatus of Kunihiro et al. to enable the apparatus to accommodate more LEDs to increase light output per apparatus.

11. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Kosman et al. as applied to claims 8 and 14 above, and further in view of Barlian et al.

Regarding claim 9, Kunihiro et al. does not disclose a cavity that is substantially white in color for reflective purposes. Barlian et al. discloses a cavity that is substantially white in color (column 6, lines 23-25) or a cavity that has a metallic coating (column 6, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose the white cavity of Barlian et al. over the metallic coating of Barlian et al. or Kunihiro et al. in the apparatus of Kunihiro et al. depending on the desired illumination effects.

Regarding claim 15, Kunihiro et al. does not disclose a white cavity as the reflective cavity. Barlian et al. discloses a cavity that is substantially white in color (column 6, lines 23-25) or a cavity that is metallic (column 6, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose the white cavity of Barlian et al. over the metallic cavity of Barlian et al. or Kunihiro et al. for the reflective coating of Kunihiro et al. depending on the desired illumination effects.

12. Claims 10, 11, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Kosman et al. as applied to claims 8 and 14 above, and further in view of Zou et al.

Regarding claim 10, Kunihiro et al. and Kosman et al. do not disclose the reflective coating comprising silver. Zou et al. discloses the light reflective material comprising silver (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the silver coating of Zou et al. in place of the reflective coating of Kunihiro et al. and Kosman et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

Concerning claim 11, Kunihiro et al. and Kosman et al. do not disclose the reflective coating comprising gold. Zou et al. discloses the reflective material comprising gold (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the gold coating of Zou et al. in place of the reflective coating of Kunihiro et al. and Kosman et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

Concerning claim 16, Kunihiro et al. and Kosman et al. do not disclose using silver as a reflective coating. Zou et al. discloses the metallic coating comprising silver (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the silver coating of Zou et al. in place of the reflective coating of Kunihiro et al. and Kosman et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

Regarding claim 17, Kunihiro et al. and Kosman et al. do not disclose using gold as a reflective coating. Zou et al. discloses the metallic coating comprising gold (column 6, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the gold coating of Zou et al. in place of the reflective coating of Kunihiro et al. and Kosman et al. to achieve a reflectivity of 80% to 93%. See column 6, lines 6-7, of Zou et al.

13. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Kosman et al. as applied to claims 8 and 14 above, and further in view of Gleason.

Regarding claim 12, Kunihiro et al. and Kosman et al. do not disclose the reflective coating being formed by plating. Gleason discloses the reflective coating being formed by plating (page 1, lines 110-112).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plating process of Gleason in the process of Kunihiro et al. and Kosman et al. to enhance the quality of the reflective surface. See page 1, line 110, to page 2, line 1, of Gleason.

Regarding claim 18, Kunihiro et al. and Kosman et al. do not disclose the metallic coating being formed by plating. Gleason discloses the metallic coating being formed by plating (page 1, lines 110-112).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plating process of Gleason in the apparatus of Kunihiro et al. and Kosman et al. to enhance the quality of the reflective surface. See page 1, line 110, to page 2, line 1, of Gleason.

14. Claims 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. in view of Kosman et al. as applied to claims 8 and 14 above, and further in view of Huang.

Concerning claim 13, Kunihiro et al. and Kosman et al. do not disclose the ceramic cavity being formed to mount a plurality of light emitting diodes. Huang discloses the ceramic cavity being formed to mount a plurality of light emitting diodes (column 4, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Huang in the apparatus of Kunihiro et al. and Kosman to enable the apparatus to contain more LEDs to produce a greater light output.

Concerning claim 19, Kunihiro et al. and Kosman et al. do not disclose a plurality of light emitting diodes. Huang discloses a plurality of light emitting diodes coupled to the substrate (column 4, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Huang in the apparatus of Kunihiro et al. and Kosman to produce a greater light output.

Response to Arguments

15. Applicant's arguments filed 4 April 2005 have been fully considered but they are not persuasive.

Applicant argues that Huang teaches away from substantially vertical sidewalls, but the Applicant does not point out where in the reference it says *not* to use vertical sidewalls. Just because the reference teaches a different type of sidewall, it does not mean that the reference teaches away from the claimed type of sidewall. For a reference to teach away from an element it must say not to use it or that it is undesirable in some way.

The other arguments are rendered moot in view of new grounds of rejection.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sep



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800